

Part Catalogue No. 6231

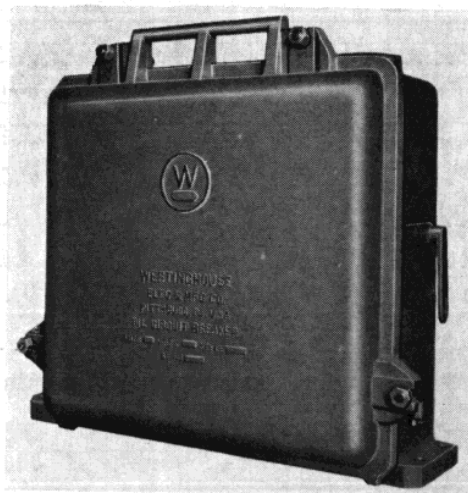
March, 1926

For prices refer to Catalogue 10-A or apply to nearest District Office

PARTS OF

Westinghouse Types M and MB Motor Operating Mechanisms For Large Oil Circuit-Breakers

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Type M or MB Motor Operating Mechanism

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
East Pittsburgh, Pa.

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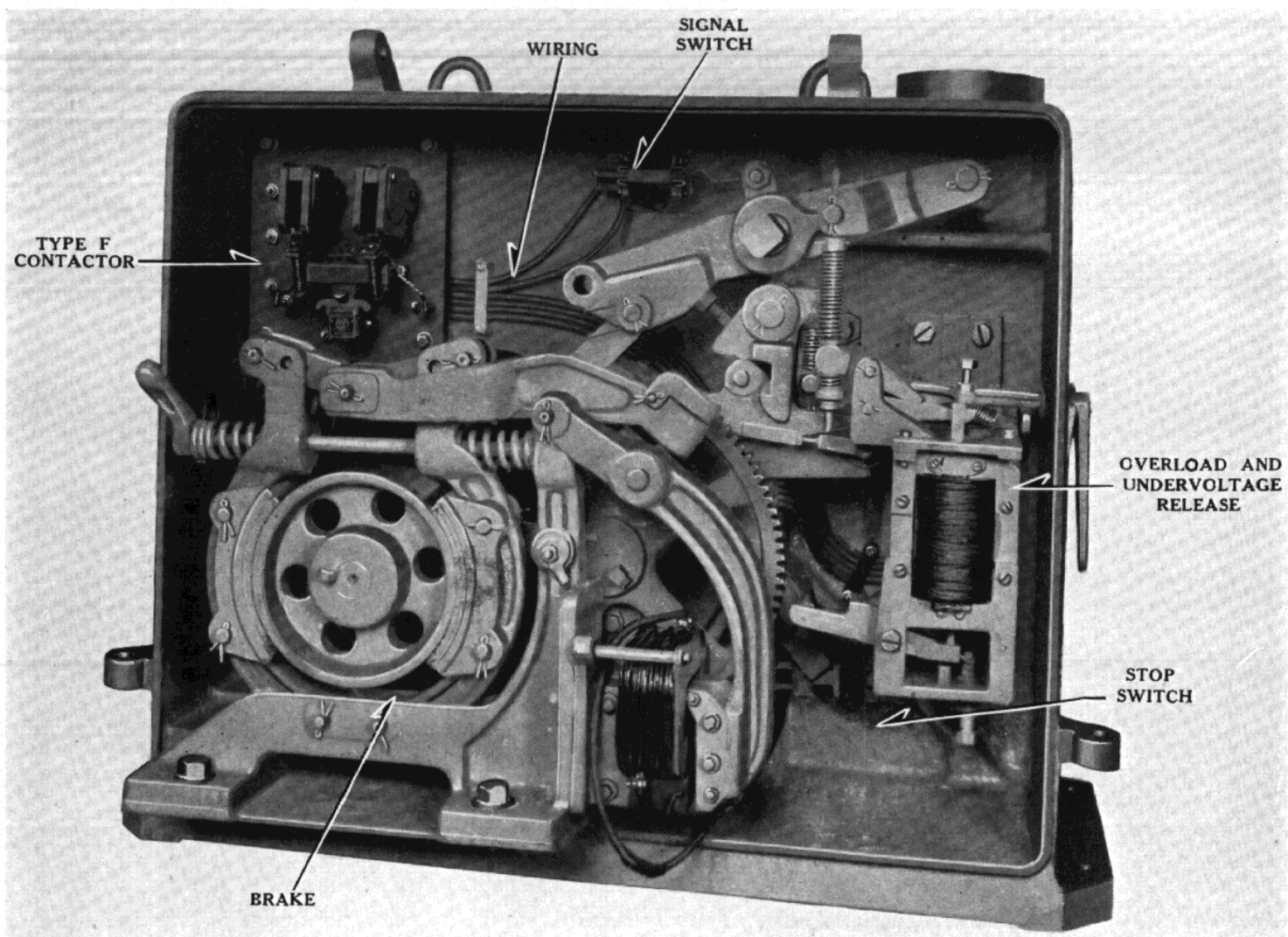
RENEWAL PARTS DATA

FOR

TYPES M AND MB MOTOR OPERATING MECHANISM

This list covers the minimum amount of Renewal Parts that should be carried in stock.

Name of Part	No. Per Mechanism	Recommended For Stock
Toggle Latch.....	1.	1
Toggle Lever.....	1.	1
Toggle Link Spring.....	1.	1
Signal Switch Complete.....	1.	2
Stop Switch Complete.....	1.	2
Leather Washer for Dash Pot.....	1.	2
Leather Washer Expander.....	1.	2
Brass Valve with Stem.....	1.	2
Valve Bushing.....	1.	2
Valve Spring.....	1.	2
Shunt Trip Coil.....	2.	2
Undervoltage Trip Coil.....	1.	1
Brake Operating Coil.....	1.	1
Set of Brushes for Motor.....	1.	1
Contact.....	4	4
Contact Spring.....	2.	1
Arc Shield.....	2.	0
Contact Holder with Shunt, Left Hand.....	1.	1
Contact Holder with Shunt, Right Hand.....	1.	1
Armature Complete.....	1.	1
Blowout Coil.....	2.	1
Operating Coil.....	1.	1



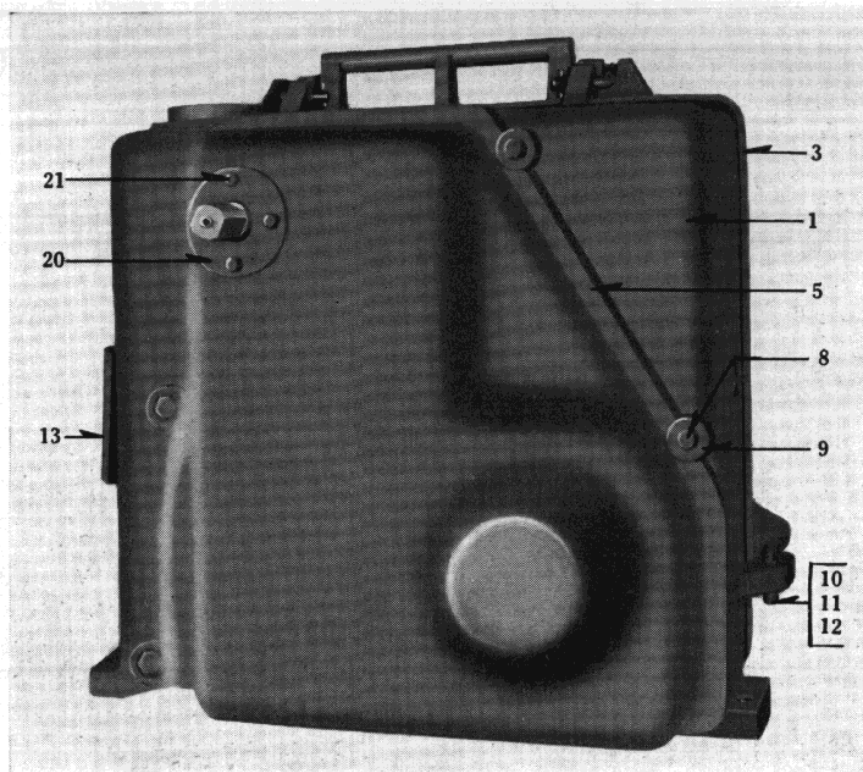
Type MB Motor Operating Mechanism With Cover Removed

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PARTS FOR TYPE M MOTOR OPERATING MECHANISM

FRAME AND DETAILS

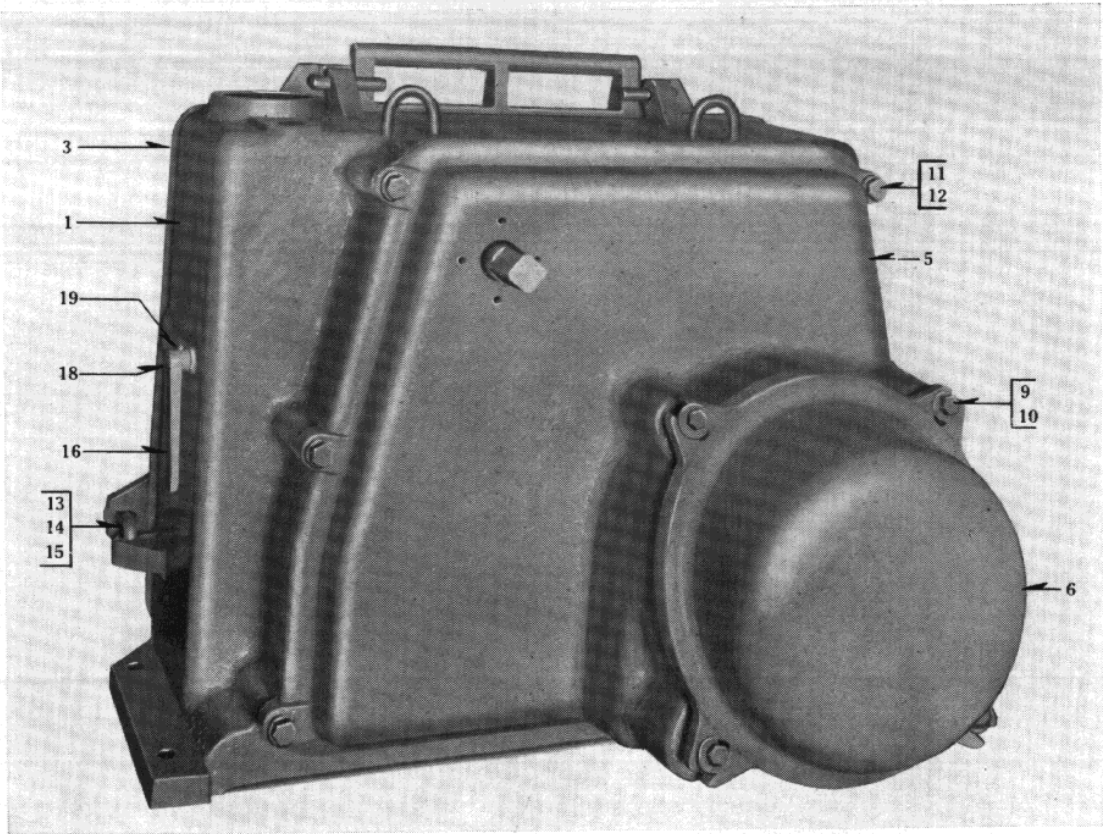


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Mechanism	Description
1	435164	1	Frame with two lifting links
2*	.....	1	Pipe plug, 1" (standard hardware), for frame
2*	.....	1	Pipe plug, 2" (standard hardware), for frame
2*	.....	1	Pipe plug, 4" (standard hardware), for frame
3	435165	1	Front cover
4*	.....	1	Gasket for front cover, 8' 10" of 1/2" square flax packing
5	435166	1	Back cover
6*	.....	1	Gasket for back cover 7'1" of 1/2" square flax packing
7	434842	1	Special front cover for indoor service
8	.....	5	Tap bolt, 5/8"-11 x 1 3/4" (standard hardware), to fasten back cover to frame
9	.....	5	Washer, 5/8" (standard hardware), for tap bolt
10	275051	4	Hinge bolt for front cover
11	.....	4	Washer, 5/8" (standard hardware), for hinge bolt
12	.....	4	Hexagon nut, 5/8"-11 (standard hardware), for bolt
13	258534	1	Trip handle
14*	.....	4	Tap bolt, 3/8"-16 x 1 1/2" (standard hardware), to fasten motor to frame
15*	.....	4	Washer, 3/8" (standard hardware), for bolt
16*	.....	4	Lock washer, 3/8" (standard hardware), for bolt
17*	435176	1	Hand trip lever
18*	434813	1	Pin through hand trip shaft and hand trip lever
19*	.....	2	Taper pin, No. 2 x 1 1/4" (standard hardware), to fasten hand trip and hand trip lever to shaft
20	435187	1	Steel washer for main shaft
21	.....	4	Tap bolt, 3/8"-16 x 1 3/8" (standard hardware), to fasten washer to back
21-A*	.....	4	Lock washer, 3/8" (standard hardware), for tap bolt
22*	435181	1	Felt washer for shaft

*Not illustrated

PARTS FOR TYPE MB MOTOR OPERATING MECHANISM
FRAME AND DETAILS

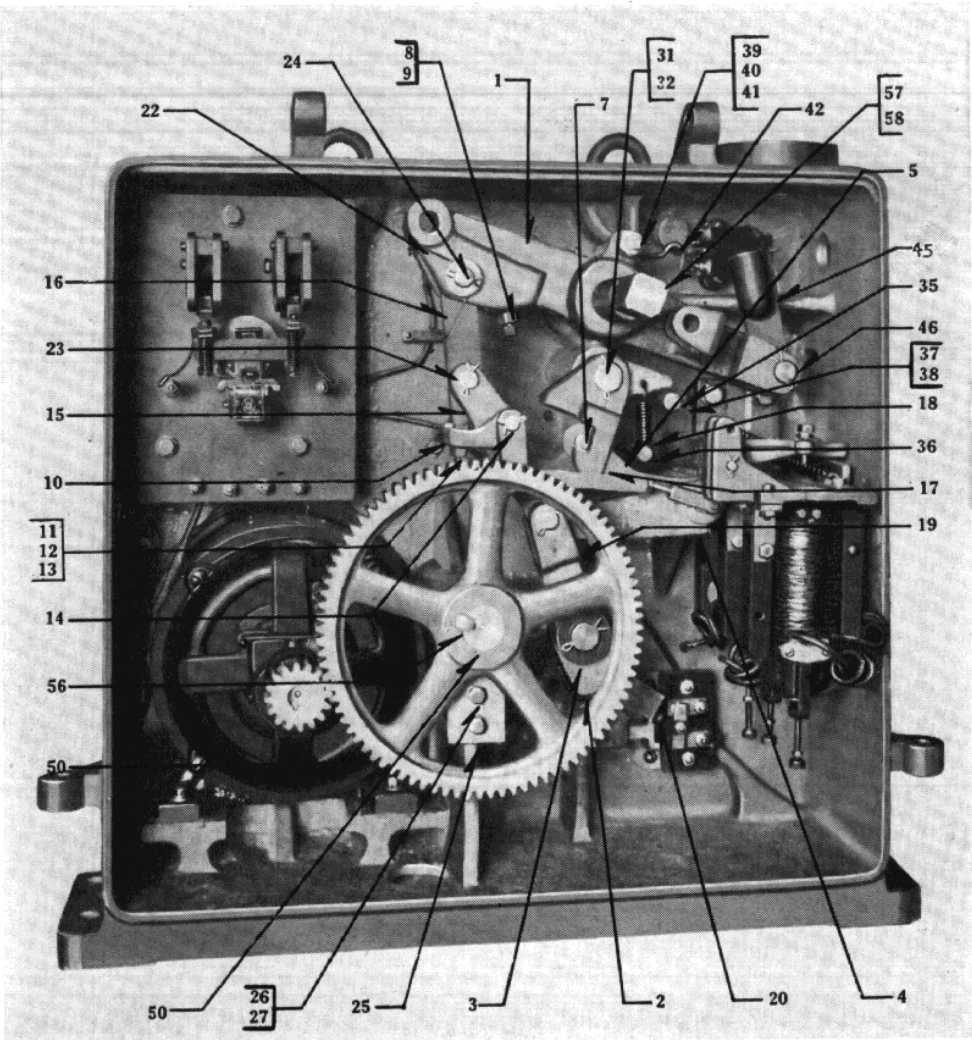


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

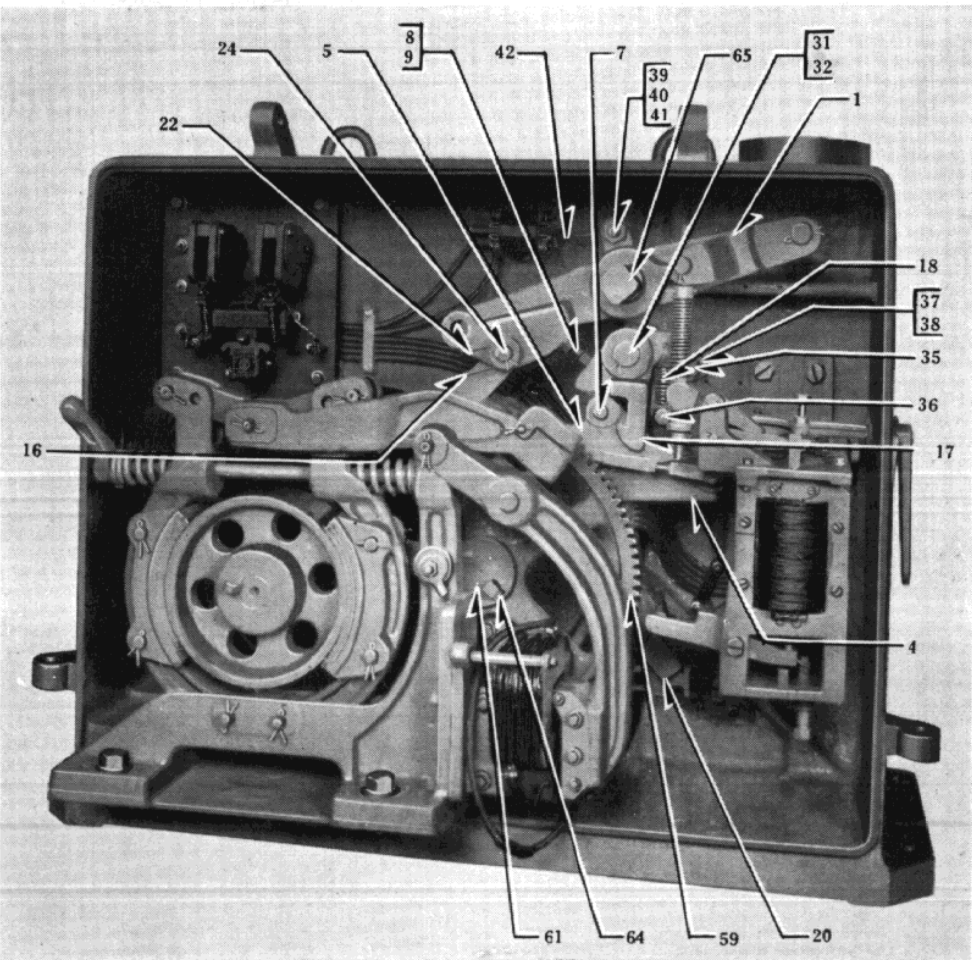
Ref No.	Style No.	No. Per Mechanism	Description
1	434848	1	Frame with two lifting links
2*	.....	1	Pipe plug, 1" (standard hardware), for frame
2*	.....	1	Pipe plug, 2" (standard hardware), for frame
2*	.....	1	Pipe plug, 3 1/2" (standard hardware), for frame
3	434849	1	Front cover
4*	.....	1	Gasket for front cover, 9'9" of 1/2" square flax packing
5	434850	1	Back cover
6	434851	1	Motor cover
7*	.....	1	Gasket for back cover, 7'10" of 1/2" square flax packing
8*	.....	1	Gasket for motor cover, 2'7 1/2" of 1/2" square flax packing
9	.....	4	Tap bolt, 1/2"-13 x 2" (standard hardware), to fasten motor cover to back cover
10	.....	4	Washer, 1/2" (standard hardware), for tap bolt
11	.....	5	Tap bolt, 5/8"-11 x 1 3/4" (standard hardware), to fasten back cover
12	.....	5	Washer, 5/8" (standard hardware), for tap bolt
13	275051	4	Hinge bolt for front cover
14	.....	4	Washer, 5/8" (standard hardware), for hinge bolt
15	.....	4	Hexagon nut, 5/8"-11 (standard hardware), for hinge bolt
16	258534	1	Trip handle
17*	435176	1	Hand trip lever
18	434813	1	Hand trip shaft
19	.....	2	Taper pin, No. 3 x 1 1/4" (standard hardware), to fasten hand trip to shaft
20*	.....	8	Tap bolt, 5/8"-11 x 1 1/2" (standard hardware), to fasten motor and back covers to frame
21*	.....	8	Washer, 5/8" (standard hardware), for tap bolt
22*	435187	1	Steel washer for main shaft
23*	435181	1	Felt washer for main shaft

*Not illustrated

MECHANISM DETAILS



Type M Motor Operating Mechanism With Cover Removed



Type MB Motor Operating Mechanism With Cover Removed

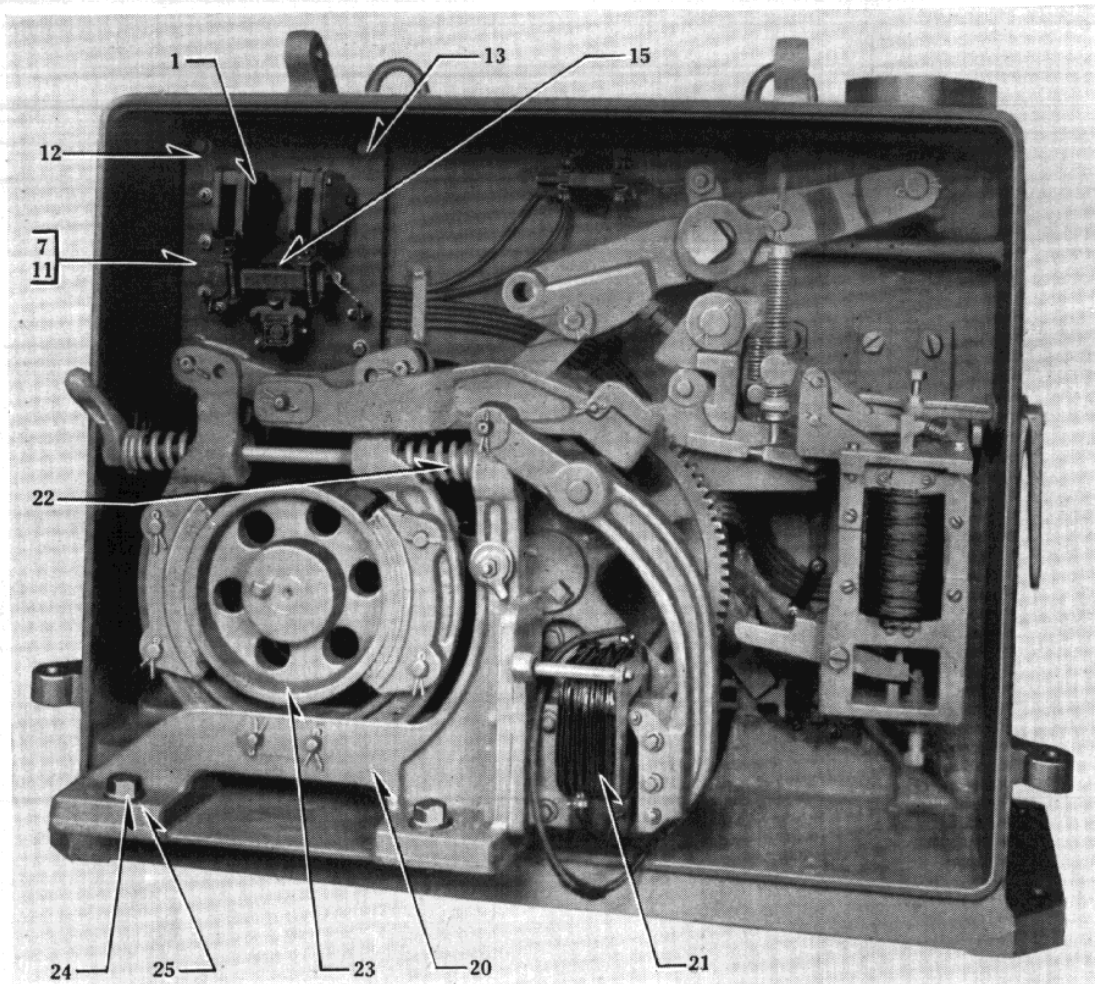
MECHANISM DETAILS—Continued**ORDER PARTS BY STYLE NUMBER AND DESCRIPTION**

Ref. No.	Style No.	No. Per Mechanism	Description
1	435167	1	Main lever
2	435174	1	Operating crank
3	.....	1	Washer, 1" (standard hardware), for crank
4	435172	1	Lower lift arm
5	435170	1	Upper lift arm
6*	60960	1	Set screw for upper lifting arm and latch pin
7	443112	1	Latch pin for upper lifting arm
8	.....	1	Adjustable set screw, $\frac{3}{8}$ "-16 x $1\frac{1}{2}$ " (standard hardware), for main lever
9	.....	1	Hexagon nut, $\frac{3}{8}$ "-16 (standard hardware), for screw
10	435175	1	Toggle latch
11	234728	1	Square head screw through toggle latch
12	.....	1	Hexagon nut, $\frac{5}{16}$ " (standard hardware), for screw
13	.....	1	Lock washer, $\frac{5}{16}$ " (standard hardware), for screw
14	87365	1	Pin used as pivot for toggle latch
15	435169	1	Toggle lever
16	435173	1	Toggle link
17	435171	1	Main latch
18	380499	1	Main latch spring
19	435168	1	Operating lever attached to operating crank
20†	435177	1	Cam to operate stop switch
21*	.....	3	Set screw, $\frac{1}{4}$ "-20 x $\frac{1}{2}$ " (standard hardware), for screw
22	434814	1	Toggle link spring
23	63622	2	Pin through toggle link, toggle joint, operating lever and lower operating arm
24	100592	1	Pin through toggle link and main lever
25	435182	1	Gear bracket
26	.....	2	Tap bolt, $\frac{3}{8}$ "-16 x $\frac{3}{4}$ " (standard hardware) to fasten gear bracket to frame
27	.....	2	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
28*	87365	1	Pin through toggle latch and trip link
29*	41002	2	Key for main lever shaft
30*	435189	1	Key for operating crank
31	435183	1	Support for main latch
32	7903	1	Washer for main latch support
33*	435184	1	Stud for lower lift arm
34*	3300	1	Washer for lower lift arm stud
35	435185	1	Stud, used as stop for main latch
36	435186	1	Support for main latch spring
37	.....	4	Hexagon nut, $\frac{5}{8}$ "-11 (standard hardware), for studs
38	.....	4	Lock washer, $\frac{5}{8}$ " (standard hardware), for stud
39	434827	1	Stud on main lever for hinge
40	.....	2	Hexagon nut, $\frac{5}{8}$ "-11 (standard hardware), for stud
41	.....	2	Lock washer, $\frac{5}{8}$ " (standard hardware), for stud
42	434828	1	Adjusting link for signal switch
43*	434829	1	Hinge for adjustment link
44*	.....	1	Hexagon nut, No. 14-24 (standard hardware), for link
45	233252	1	Rod end for main lever, for down pull mechanism
46	434840	1	Pin through rod end and main lever
			Parts for Up-Pull Mechanism Only
47*	434841	1	Rod clevis, for up pull mechanism
48*	88354	1	Pin through rod clevis and main lever
49*	434839	1	Hand closing lever
			Parts for Type M Motor Operating Mechanism Only
50	435178	1	Gear, front
51*	435179	1	Gear, rear
52	435180	1	Pinion and shaft for front gear
53*	434843	1	Pinion for 1 H.P. motor
54*	434844	1	Pinion for $1\frac{1}{2}$ " H.P. motor
55*	118869	1	Key for pinion
56	435188	1	Key for pinion shaft
57	434846	1	Shaft, $20\frac{5}{8}$ " long
58	434847	1	Shaft, $28\frac{3}{4}$ " long (used only with indoor cell mounting breakers)
			Parts for Type MB Motor Operating Mechanism
59	434852	1	Gear, front
60*	435179	1	Gear, rear
61	435180	1	Pinion and shaft for front gear
62*	434853	1	Pinion, for $1\frac{1}{2}$ " H.P. motor
63*	434854	1	Key for pinion
64	434855	1	Key for pinion and shaft
65	434858	1	Shaft, $20\frac{5}{8}$ " long

*Not illustrated

†See Page 9 for Stop Switch and Details.

CONTACTOR, MOTOR, BRAKE AND DETAILS



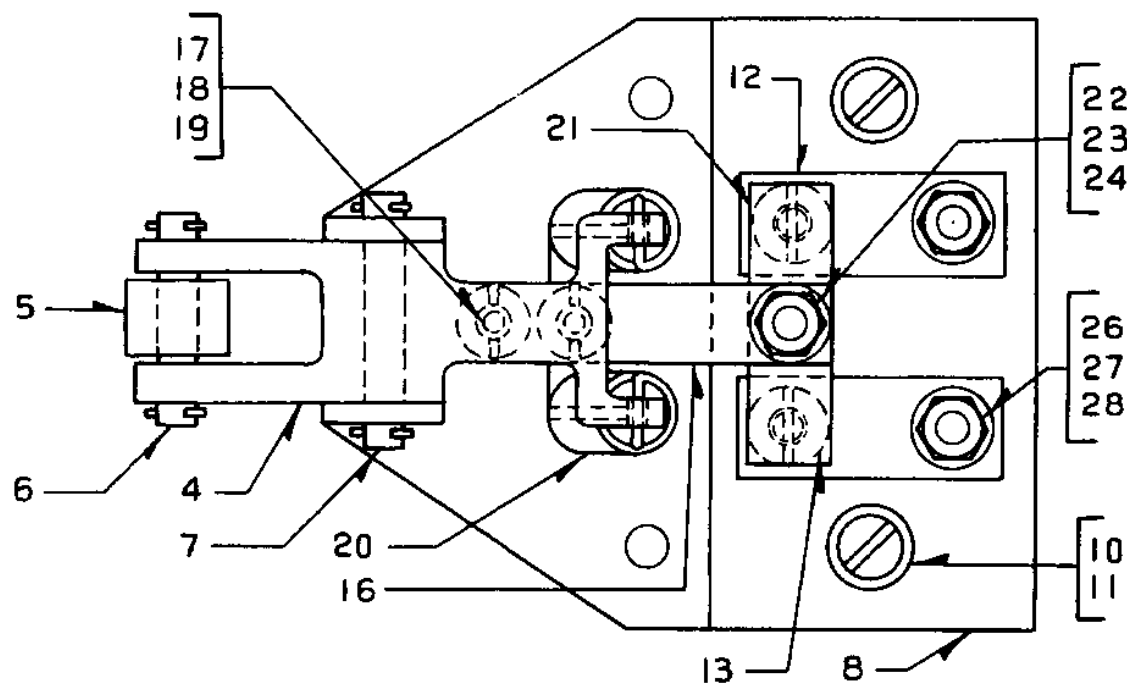
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Mechanism	Description
1	378816	1	Type 22 F-2 contactor complete (see pages 17-18 for details)
2*	361705	4	Terminal for contactor
3*	3410	8	Washer for terminal
4*	40662	16	Nut for terminal
5*	.....	4	Lock washer, $\frac{5}{16}$ " (standard hardware), for terminal
6*	148425	16	Crimp washer for terminal
7	435200	1	Slate base for contactor for mechanism without brake
8*	434817	3	Tie bolt for base for mechanism without brake
9*	.....	9	Hexagon nut, $\frac{5}{16}$ " (standard hardware), for bolt
10*	.....	6	Iron washer, $\frac{5}{16}$ " (standard hardware), for bolt
11	434857	1	Slate base for contactor for mechanism with brake
12	.....	4	Tap bolt, $\frac{5}{16}$ "-18 x $1\frac{1}{4}$ " (standard hardware), to fasten base to frame
13	.....	4	Iron washer, $\frac{5}{16}$ " (standard hardware), for bolt
14*	.....	4	Lock washer, $\frac{5}{16}$ " (standard hardware), for bolt
15**	.....	1	Coil for contactor
16*	203363	1	Type AR motor, 1 H.P. 110 or 220 volts, 60 cycles, used with Type M Mechanism only (for details see Class RP 2850.4)
16*	241346	1	Type AR motor, 1 H.P. 110 or 220 volts, 25 cycles, used with Type M Mechanism only (for details see Class RP 2850.4)
16*	203365	1	Type AR motor $1\frac{1}{2}$ H.P. 110 or 220 volts, 60 cycles, used with Type M Mechanism only (for details see Class RP 2850.4)
16*	.....	1	Type C Motor, 3 H.P. 110 volts, 60 cycles used with Type MB Mechanism only (for details see Class RP 3340)
17*	.....	4	Tap bolt, $\frac{3}{8}$ "-16 x $1\frac{1}{2}$ " (standard hardware), to fasten motor to frame
18*	.....	4	Iron washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
10*	.....	4	Lock washer, $\frac{3}{8}$ " (standard hardware), for tap bolt
29	271559	1	Type A Magnetic Brake
21	.....	1	Coil for brake (when ordering coil specify voltage and frequency of coil)
22	271560	2	Brake spring
23	271756	1	Brake wheel
24	.....	8	Tap bolt, $\frac{5}{8}$ "-11 x $1\frac{1}{2}$ " (standard hardware), to fasten motor and brake to frame
25	.....	8	Iron washer, $\frac{5}{8}$ " (standard hardware), for tap bolt

*Not illustrated

**When ordering coil specify control voltage and frequency.

STOP SWITCH AND DETAILS

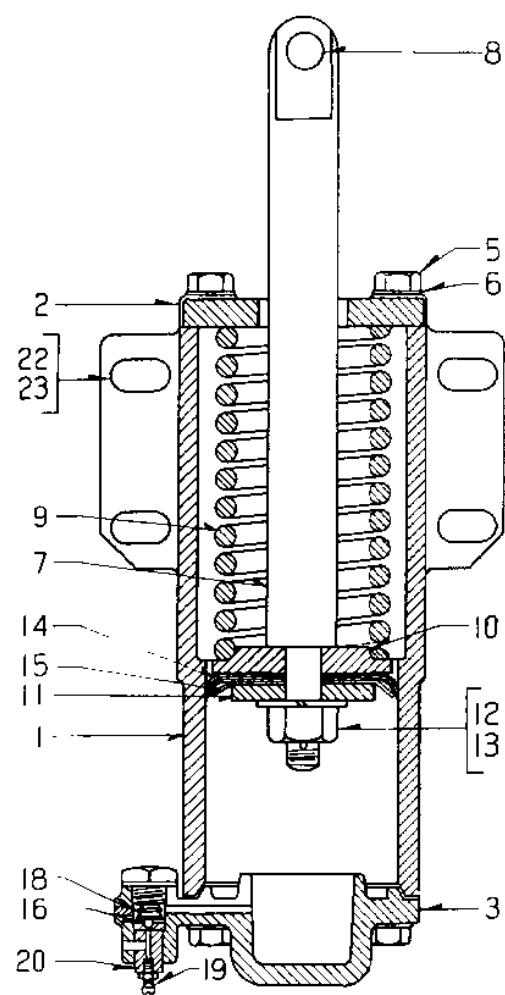


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Req.	Description
..	443467	1	Stop switch complete
1	435191	1	Base with lever support and spring attachment
2	.....	2	Fillister head iron machine screw, No. 14-24 x 3/4" (standard hardware), to fasten base to frame
3	.....	2	Lock washer, 1/4" (standard hardware), for screw
4	435196	1	Main lever
5	435197	1	Roller
6	88902	1	Pin to hold roller in lever
7	63594	1	Pin used as pivot for lever
8	435192	1	Micarta insulating bottom plate
9*	435193	1	Micarta insulating top plate
10	.....	2	Fillister head iron machine screw, No. 14-24 x 7/8" (standard hardware), to fasten plates to base
11	7443	2	Washer for screw
12	435194	2	Copper connector
13	435195	2	Copper contacts
14*	.....	2	Fillister head brass machine screw No. 10-32 x 5/8" (standard hardware), to fasten contacts to base
15*	3421	2	Washer for screw
16	435198	1	Micarta extension lever
17	.....	2	Fillister head brass machine screw, No. 10-32 x 7/8" (standard hardware), to fasten extension lever to iron lever
18	.....	2	Hexagon brass nut, No. 10-32 (standard hardware), for screw
19	3421	2	Washer for screw
20	114909	2	Spring for extension lever
21	435199	1	Copper contact bar
22	.....	1	Fillister head brass machine screw, No. 8-32 x 7/8" (standard hardware), to fasten contact bar to extension lever
22-A*	.....	1	Lock washer (standard hardware), for No. 8-32 screw
23	.....	1	Hexagon brass nut, No. 8-32 (standard hardware), for screw
24	3218	2	Washer, for screw
25*	435190	1	Brass spacer for screw
26	.....	2	Fillister head brass machine screw, No. 10-32 x 7/8" (standard hardware), used as stud
26-A*	.....	2	Lock washer (standard hardware), for No. 10-32 screw
27	.....	2	Hexagon brass nut, No. 10-32 (standard hardware), for screw
28	3421	2	Washer for screw
29*	136333	2	Terminal washer for screw

*Not illustrated

DASH POT AND DETAILS

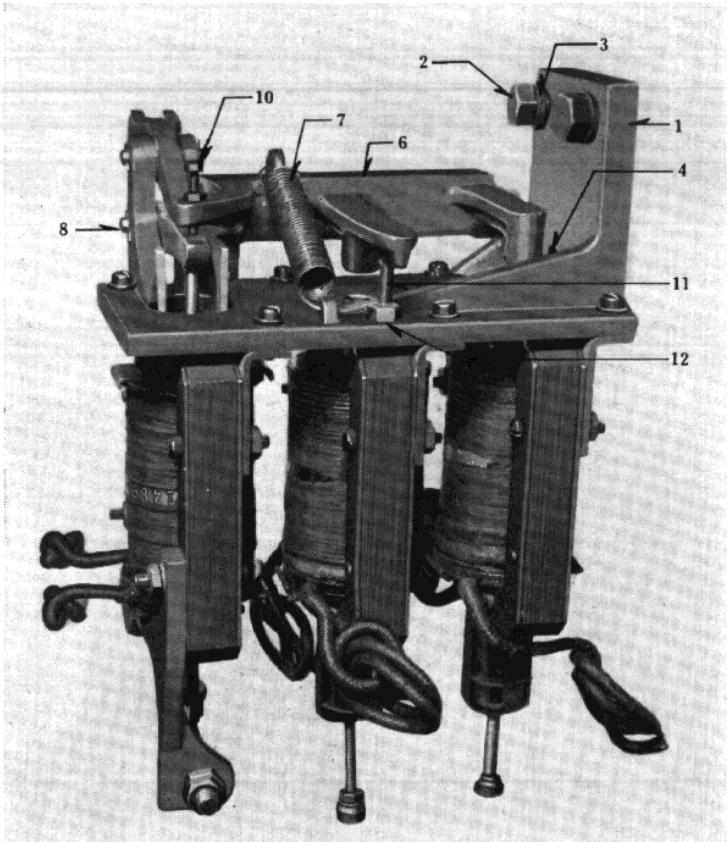


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Req.	Description
1	434819	1	Cylinder
2	434820	1	Cylinder head
3	434821	1	Cylinder end
4	434826	1	Gasket used between cylinder end and cylinder
5	.....	8	Tap bolt, $\frac{3}{8}$ "-16 x $1\frac{1}{8}$ " (standard hardware), to fasten cylinder end and head to cylinder
6	.....	8	Lock washer, $\frac{3}{8}$ " (standard hardware), for screw
7	434823	1	Plunger rod
8	87679	1	Pin to connect plunger rod to lever
9	388719	1	Plunger spring
10	434824	1	Spring seat
11	434825	1	Follower
12	.....	1	Hexagon nut, $\frac{5}{8}$ "-11 (standard hardware), to fasten follower to rod
13	.....	1	Lock washer, $\frac{5}{8}$ " (standard hardware), for nut
14	112505	1	Leather washer
15	69102	1	Expander for leather washer
16	319039	1	Brass valve, with stem
17	214139	1	Valve bushing
18	198929	1	Valve spring
19	.....	1	Fillister head brass machine screw, No. 10-32 x $\frac{1}{2}$ " (standard hardware), used as adjusting screw for valve
20	40662	1	Nut for adjusting screw
21*	434818	1	Brass plug
22	.....	4	Tap bolt, $\frac{1}{2}$ "-13 x $1\frac{1}{2}$ " (standard hardware), to fasten dash pot to frame
23	.....	4	Lock washer, $\frac{1}{2}$ " (standard hardware), for bolt

*Not illustrated

TRIP MECHANISM DETAILS

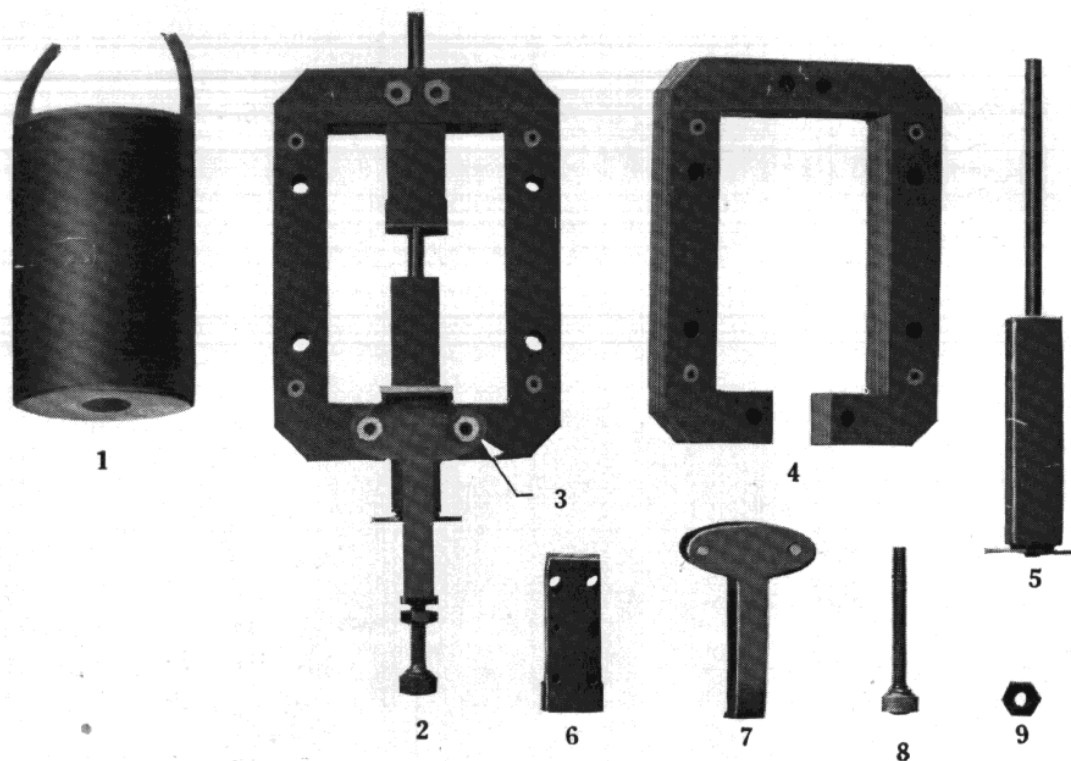


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Req.	Description
1	435201	1	Trip supporting bracket
2	.....	2	Tap bolt, 1/2"-13 x 1 1/2" (standard hardware), to fasten supporting bracket to frame
3	.....	2	Lock washer, 1/2" (standard hardware), for bolt
4	.....	1	Fillister head iron machine screw, 5/16"-18 x 1" to fasten trip supporting bracket to frame
5	.....	1	Lock washer, 5/16" (standard hardware), for bolt
6	435202	1	Tripping lever
7	282841	1	Tripping lever spring
8	435204	1	Pin used as pivot for tripping lever
9*	87365	1	Pin to connect tripping lever to trip link
10	435203	1	Undervoltage or shunt trip screw
11	435205	1	Trigger adjusting screw
12	.....	2	Hexagon iron nut, No. 14-24 (standard hardware), for trigger adjusting screw and trip screw

*Not illustrated

OVERLOAD TRIP ATTACHMENT AND DETAILS



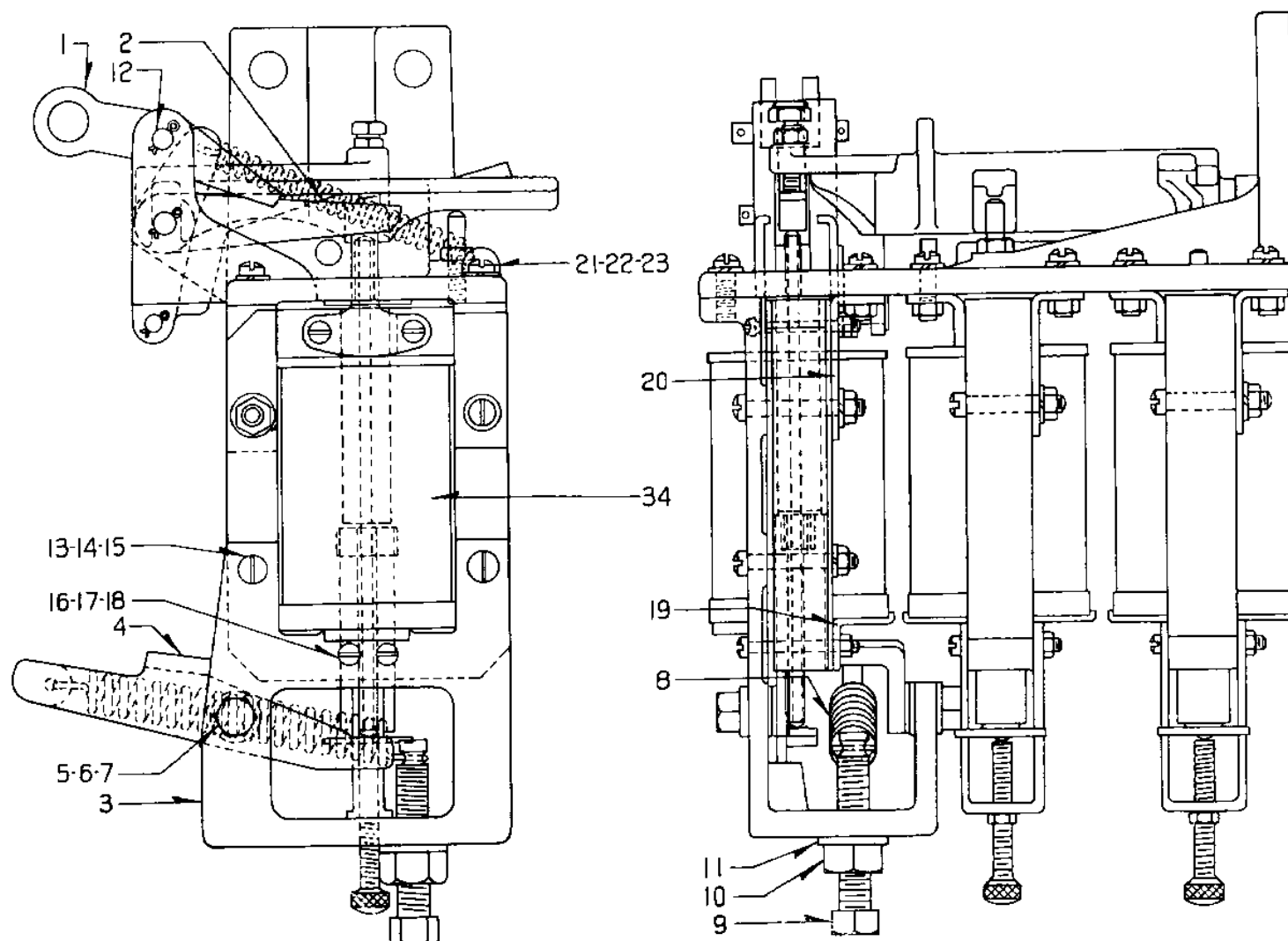
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Attachment	Description
1	224185	2	Overload trip coil (5 Amp.)
1†	.....	..	Shunt trip coil
2	150614	2	Magnet circuit complete without coil (includes Ref. Nos. 3 to 9, inclusive)
3	88828	2	Sheet steel bracket
4	116759	1	Magnet frame
5	126283	1	Moving core
6	116760	1	Stationary core
7	88827	1	Sheet copper guide
8	88829	1	Brass adjusting screw
9	46868	1	Hexagon brass nut for adjusting screw
10*	.....	..	Tap bolt, 1/4"-20 x 1 5/8" (standard hardware), for mounting magnet circuit on operating mechanism
11*	.....	..	Lock washer, 1/4" (standard hardware), for tap bolt
12*	434830	4	Overload trip support
13*	.....	4	Fillister head iron machine screw No. 14-24 x 1 1/2" (standard hardware), to fasten overload trip to support
14*	.....	4	Hexagon iron nut, No. 14-24 (standard hardware), for screw
15*	.....	4	Lock washer, 1/4" (standard hardware), for screw
16*	.....	4	Fillister head iron machine screw, No. 14-24 x 7/8" (standard hardware), to fasten trip support to release bracket
17*	.....	4	Hexagon iron nut, No. 14-24 (standard hardware), for screw
18*	.....	4	Lock washer, 1/4" (standard hardware), for screw

*Not illustrated

†May be used in place of an Overload Trip Coil if desired. When ordering specify operating voltage and frequency.

UNDervoltage RELEASE DETAILS

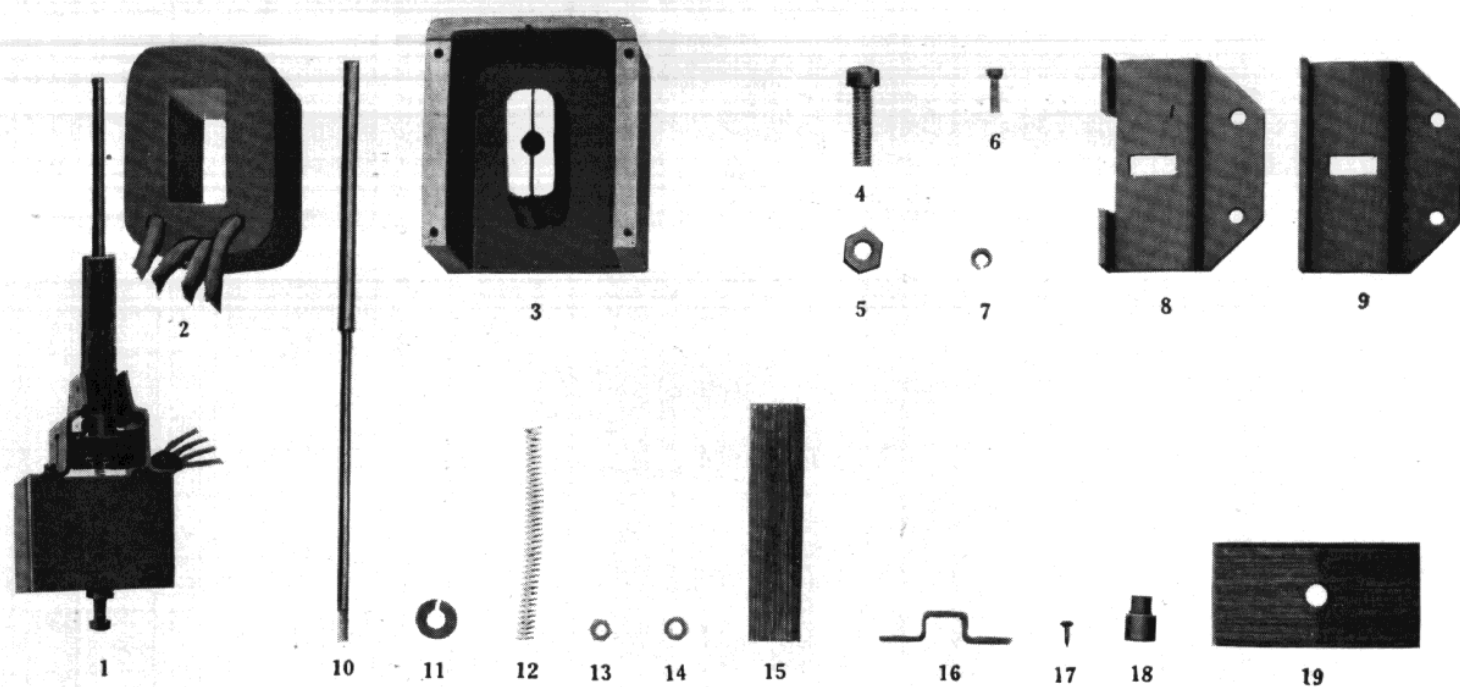


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Release	Description
1	434831	1	Retrieving lever
2	434832	1	Retrieving arm
3	434833	1	Support for undervoltage trip lever
4	434834	1	Undervoltage trip lever
5	434835	2	Bearing screw for undervoltage trip lever
6	3428	2	Washer for screw
7	.....	2	Lock washer, $\frac{3}{8}$ " (standard hardware), for screw
8	434838	1	Main spring for trip lever
9	406013	1	Adjusting screw for main spring
10	.....	1	Hexagon nut, $\frac{1}{2}$ "-13 (standard hardware), for adjusting screw
11	.....	1	Lock washer, $\frac{1}{2}$ " (standard hardware), for screw
12	63600	1	Pin through retrieving lever and release bracket
13	.....	4	Fillister head iron machine screw, No. 14-24 x $1\frac{3}{4}$ " (standard hardware), to fasten magnet to support
14	.....	4	Lock washer, $\frac{1}{4}$ " (standard hardware), for screw
15	.....	4	Hexagon iron nut, No. 14-24 (standard hardware), for screw
16	.....	2	Fillister head iron machine screw, No. 10-32x $1\frac{3}{4}$ " (standard hardware) to fasten stationary core to support
17	.....	2	Lock washer (standard hardware) for No. 10-32 screw
18	.....	2	Hexagon iron machine screw nut, No. 10-32 (standard hardware), for screw
19	406017	1	Coil support
20	434830	2	Support bracket
21	.....	3	Fillister head iron machine screw, No. 14-24 x $\frac{7}{8}$ " (standard hardware), to fasten supporting bracket and support to release bracket
22	.....	3	Lock washer, $\frac{1}{4}$ " (standard hardware), for screw
23	.....	3	Hexagon iron machine screw nut, No. 14-24 (standard hardware), for screw
24*	434836	1	Retrieve rod
25*	406018	1	Retrieve rod spring, upper
26*	464965	1	Retrieve rod spring, lower
27*	406015	1	Hub on retrieve rod, to hold upper spring
28*	3428	1	Washer on retrieve rod, for lower end of upper spring
29*	.....	1	Taper pin, No. 0 x $\frac{3}{4}$ " (standard hardware), through hub and retrieving rod
30*	406012	2	Washer for retrieve rod, for lower spring
31*	434837	1	Swivel pin for retrieve rod, through main lever
32*	406014	1	Swivel pin for retrieve rod, through retrieving lever
33*	.....	3	Hexagon iron machine screw nut, $\frac{3}{16}$ " (standard hardware), for retrieve rod
34	.....	1	Undervoltage trip coil (when ordering specify control voltage and frequency)

*Not illustrated

DIRECT TRIP ATTACHMENT, STYLE NO. 304494, AND DETAILS

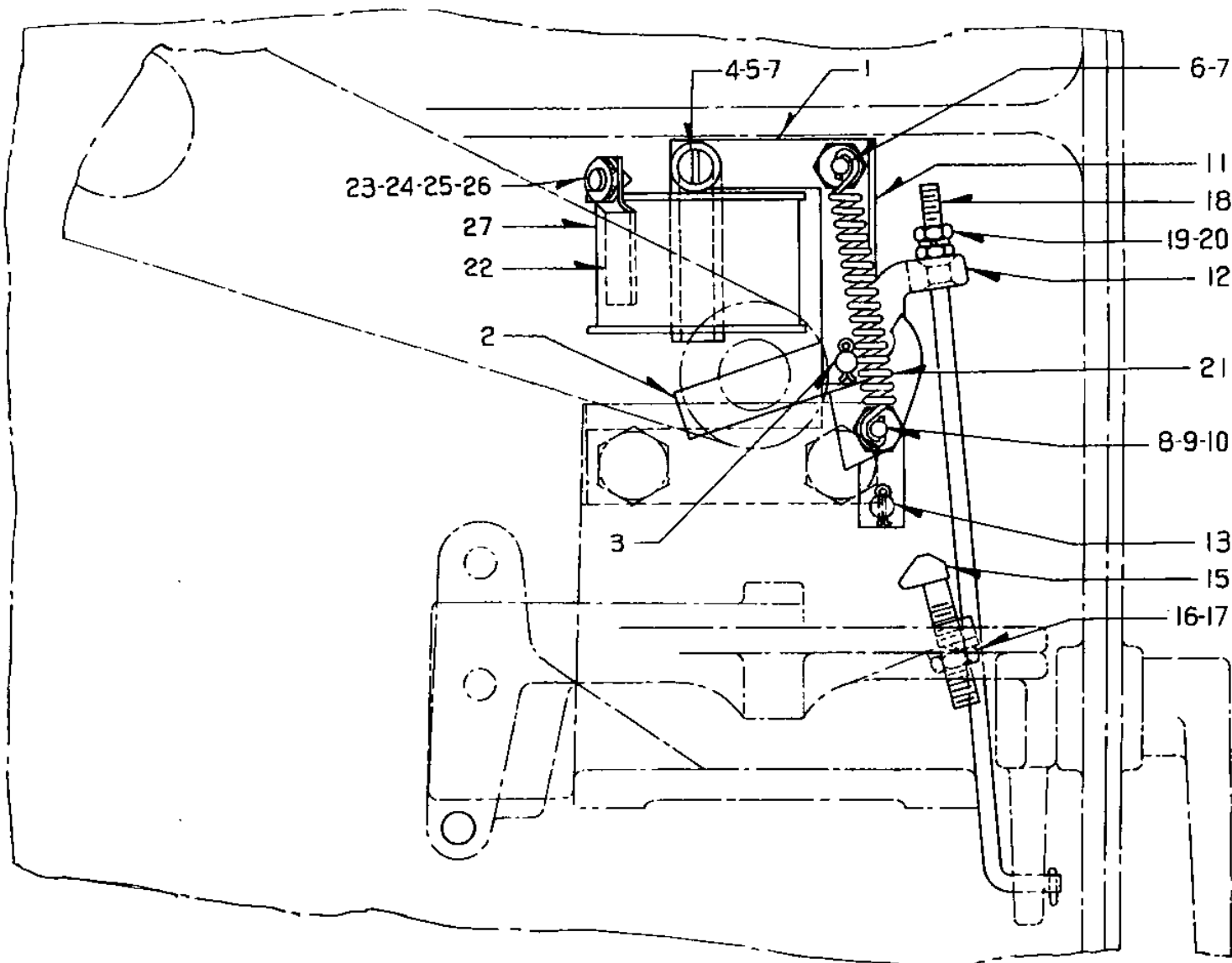


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

On January 1, 1923 Style No. 304494 superseded Style No. 209741. The complete attachments are interchangeable, but not the parts.

Ref. No.	Style No.	No. Per Attachment	Description
1	304494	1	Direct trip attachment complete
2	318147	1	Coil complete
3	318139	1	Magnet yoke
4	.....	1	Fillister head iron machine screw, $\frac{5}{16}$ "-18 x $\frac{1}{8}$ " (standard hardware), to fit on base of yoke, used as adjusting screw
5	46869	1	Hexagon brass nut, for machine screw
6	.....	4	Fillister head iron machine screw, No. 8-32 x $\frac{1}{2}$ " (standard hardware), to fasten brackets to magnet yoke
7	125680	4	Iron lock washer, for machine screw
8	318145	1	Bracket, to fit on top of yoke, with piece cut out of bottom
9	318142	1	Bracket, to fit on top of yoke
10	318144	1	Trip rod, for moving core
11	233098	1	Lock washer, for top of moving core
12	318143	1	Spring, for moving core
13	119326	1	Brass nut, to fit on bottom of moving core trip rod
14	3218	1	Brass washer, for nut
15	116761	1	Moving core
16	318140	1	Moving core guide
17	380249	1	Dowel pin, to fasten moving core guide to moving core
18	318141	1	Brass bushing, to fit in magnet armature
19	318146	1	Magnet armature

LOCK-OUT ATTACHMENT DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

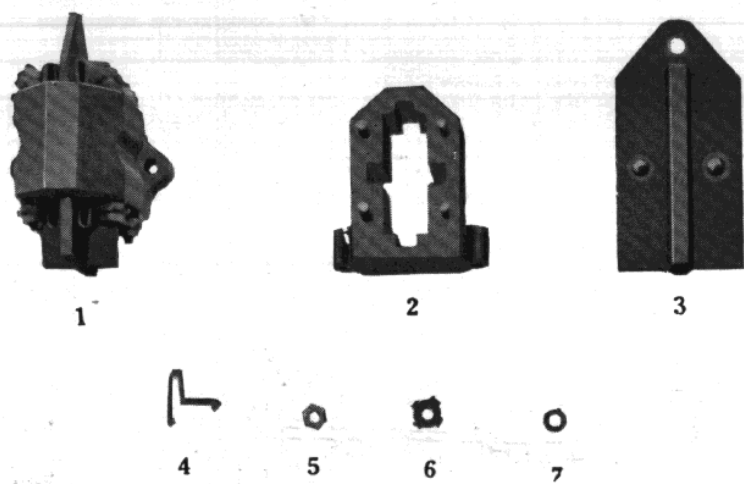
Ref. No.	Style No.	No. Per Attachment	Description
1	300771	1	Magnet
2	300770	1	Armature
3	63593	1	Armature bearing pin
4	.....	1	Fillister head iron machine screw, No. 10-32x1 $\frac{5}{8}$ " (standard hardware), to fasten magnet to magnet support
5	.....	1	Lock washer, (standard hardware), for No. 10-32 screw
6	464974	1	Fillister head iron machine screw, No. 14-24 x 2 $\frac{1}{4}$ " (standard hardware), through magnet drilled for spring
7	464976	2	Spacer for screws
8	464975	1	Flat head iron machine screw, No. 14-24 x 1 $\frac{3}{8}$ " (standard hardware), through stop, drilled for spring
9	.....	2	Hexagon iron nut, No. 14-24 (standard hardware), for screws
10	.....	2	Lock washer, $\frac{1}{4}$ " (standard hardware), for screws
11	464970	1	Magnet support
12	464969	1	Stop
13	464972	1	Pin for stop
14*	.....	1	Set screw, No. 14-24 x 1" (standard hardware), for stop
15	464971	1	Latch
16	.....	1	Lock nut, No. 14-24 (standard hardware), for latch
17	.....	1	Lock washer, $\frac{1}{4}$ " (standard hardware), for lock nut
18	464973	1	Lock out rod
19	.....	2	Lock nut, No. 10-32 (standard hardware), for rod
20	.....	2	Lock washer (standard hardware), for No. 10-32 lock nut
21	464977	1	Spring
22	253429	2	Terminal clip
23	.....	2	Fillister head brass machine screw, No. 8-32 x $\frac{3}{8}$ " (standard hardware), for terminal screw
24	.....	2	Hexagon iron machine screw nut, No. 10-32 (standard hardware), for screw
25	125680	2	Lock washer for screw
26	269741	4	Crimp washer for screw
27**	.....	1	Operating coil

*Not illustrated.

**When ordering coil, give stock order number and full name plate reading.

SIGNAL SWITCH AND DETAILS

Used Only On Mechanisms Supplied Previous to November, 1925



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Switch	Description
1	216071	..	Signal switch complete (includes Ref. Nos. 2 to 7 inclusive)
2	377723	1	Moulded composition switch body and studs
3	220996	1	Moulded composition plunger with contact piece
4	220999	8	Phosphor bronze contact
5	40662	16	Hexagon brass nut, for stud
6	148425	8	Crimp washer, for stud
7	.....	8	Lock washer, 1/8" (standard hardware), for stud
8*	.....	2	Fillister head iron machine screw, No.14-24 x 1" (standard hardware), to fasten signal switch to frame

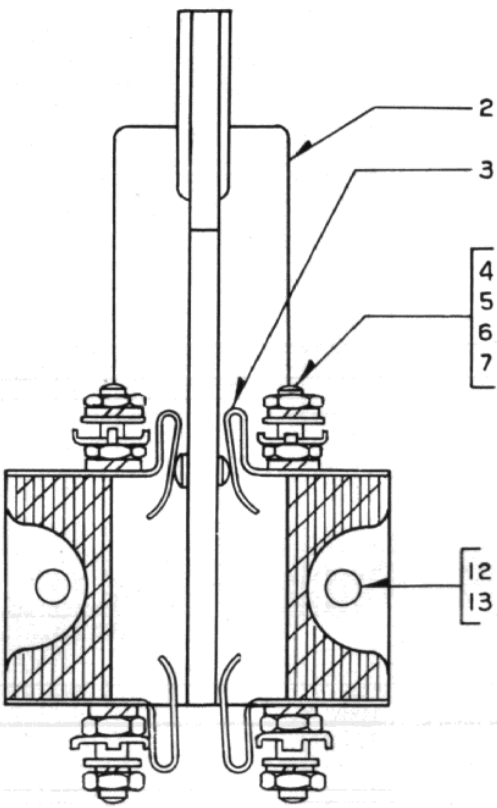
HEAVY TYPE SIGNAL SWITCH AND DETAILS

Used Only On Mechanisms Supplied After November, 1925

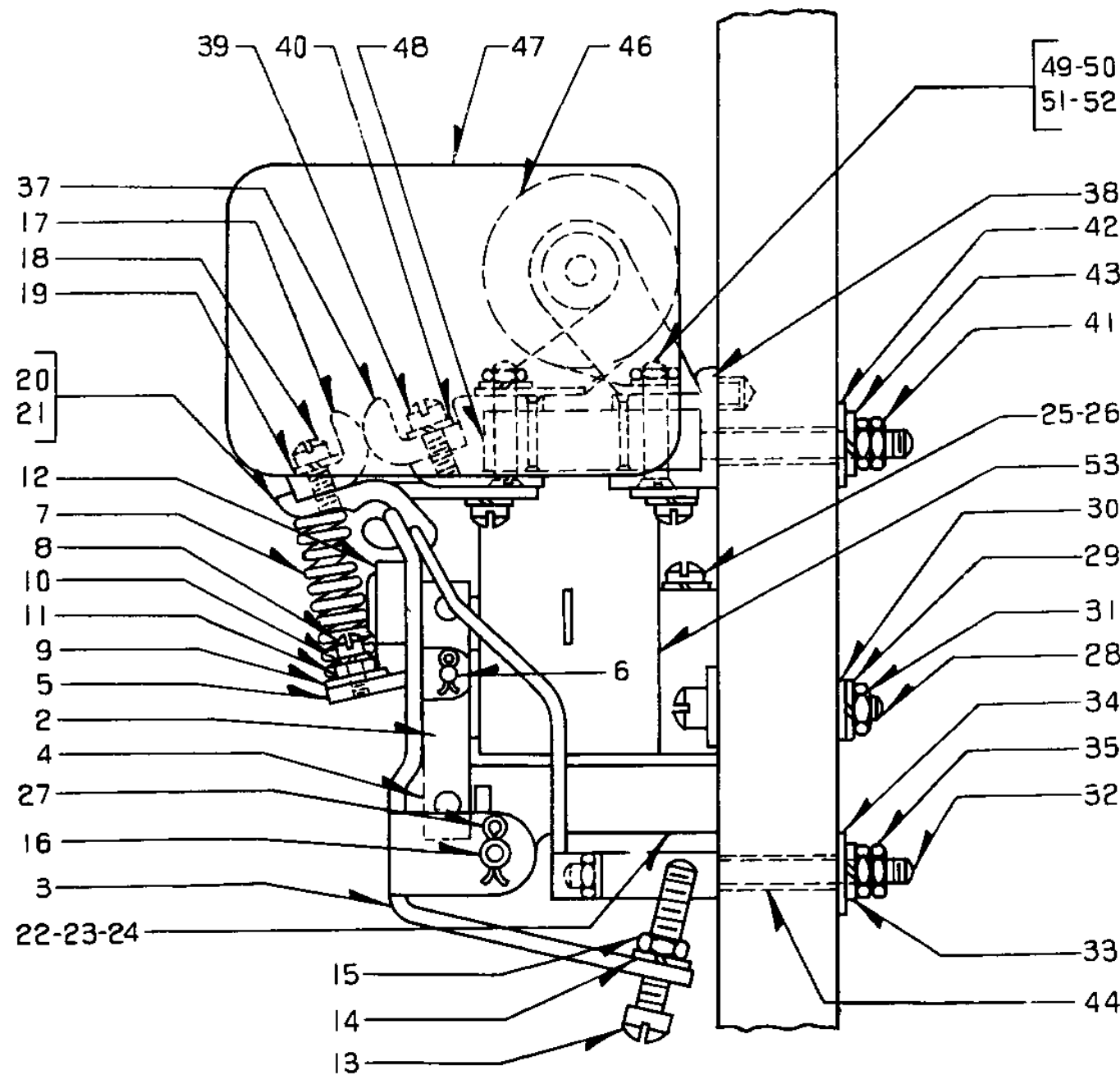
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Switch	Description
..	437769	..	Heavy type signal switch complete
1*	437772	1	Switch body complete with screws
2	437776	1	Switch plunger complete with studs
3	220999	8	Contact
4	7443	8	Washer for contact screw
5	.....	16	Lock washer (standard hardware), for No. 10-32 contact screw
6	40662	16	Nut for screw
7	148425	8	Crimp washer for screw
8*	464966	2	Signal switch link
9*	464967	2	Stud for signal switch link
10*	.....	4	Nut, 1/4" (standard hardware), for stud
11*	.....	4	Lock washer, 1/4" (standard hardware), for stud
12	.....	4	Fillister head iron machine screw, No. 14-24 x 1 3/8" (standard hardware), to mount signal switch
13	.....	4	Lock washer, 1/4" (standard hardware), for screw

*Not illustrated.



TYPE 22-F2 CONTACTOR AND DETAILS



Reference No. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Contactor	Description
1	378816	1	Contactor complete
2	451022	1	Armature complete (consists of Ref. Nos. 3 to 21)
3	332363	1	Moving armature
4	332345	1	Armature Lever
5	332343	2	Contact lever bracket
6	332364	1	Pin through moving armature and armature lever
7	116287	2	Contact spring
8	...	2	Fillister head iron machine screw, No. 4-40 x 3/8" (standard hardware), for spring
9	301966	2	Washer for screw
10	...	2	Lock washer, (standard hardware), for No. 4-40 screw
11	332348	2	Hard fibre washer for screw
12	332360	1	Micarta bridge
13	...	1	Fillister head brass machine screw, No. 14-24 x 1 1/4" (standard hardware), to adjust armature
14	303535	1	Lock washer for screw
15	46868	1	Brass nut for screw
16	247442	1	Bearing shaft for moving armature lever
17	184665	2	Contact

TYPE 22-F2 CONTACTOR AND DETAILS—Continued

Illustrated on Page 17

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. Per Contactor	Description
18	.....	2	Fillister head brass machine screw No. 10-32 x 5/8" (standard hardware), to fasten contact to contact holder
19	.....	2	Lock washer (standard hardware) for No. 10-32 screw
20	365456	1	Contact holder with shunt, left hand
21	365457	1	Contact holder with shunt, right hand
22	332362	1	Stationary magnet
23	204950	2	Shading coil, 50-60 cycle
24	432257	2	Shading coil, 25 cycle
25	.....	1	Fillister head brass machine screw, No. 10-32 x 1/4" (standard hardware), for stationary magnet clip
26	253429	1	Brass clip for stationary magnet
27	187244	2	Snap spring for bearing shaft
28	.....	2	Fillister head iron machine screw, No. 14-24 x 1 1/4" (standard hardware), to mount stationary magnet
29	.....	2	Lock washer, 1/4" (standard hardware), for screw
30	3424	4	Washer for screw
31	46868	4	Nut for screw
32	124888	2	Stud through base
33	.....	2	Lock washer, 1/4" (standard hardware), for stud
34	3424	2	Washer for stud
35	46868	4	Nut for stud
36	7443	2	Washer for moving armature pin
37	184665	2	Contact
38	432162	2	Contact support with dowel pin
39	.....	2	Fillister head brass machine screw, No. 10-32 x 5/8" (standard hardware), to fasten contact to contact support
40	.....	2	Lock washer (standard hardware) for No. 10-32 screw
41	46868	4	Nut for stud on contact support
42	3424	2	Washer for nut
43	.....	2	Lock washer, 1/4" (standard hardware), for nut
44	332349	2	Pipe spacer for stud through base
45*	.....	1	Name plate No. 6873
46	450327	2	Blowout coil
47	332357	2	Arc shield
48	450326	2	Insulation piece for contact support
49	.....	4	Flat head brass machine screw, No. 10-32 x 1 1/2" (standard hardware), to fasten blowout coil to contact support
50	40662	4	Nut for screw
51	.....	4	Lock washer, (standard hardware), for No. 10-32 screw
52	332355	1	Washer for screw
53	.....	1	Operating coil (when ordering coils give stock order number and complete name plate reading)

Wiring Details for Mechanism

199652	.	Wire cleat for two wires
199653	.	Wire cleat for three wires
199654	.	Wire cleat for four wires
199655	.	Wire cleat for five wires
199656	.	Wire cleat for six wires
199657	.	Wire cleat for seven wires
199658	.	Wire cleat for eight wires
.....	..	Fillister head iron machine screw, No. 6-32 x 1" (standard hardware), to fasten cleats
3419	.	Washer for screw

*Not Illustrated.

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